

OBE's End-Use Classification of Foreign Trade:

The Changing Pattern of U.S. Exports and Imports Since the Mid-1920's

Almost half of this country's combined export and import trade is now in finished (final) products, compared to less than 20 percent before World War II. This is one of many observations that emerge from an analysis of a new volume of U.S. foreign trade statistics just published by OBE, presenting the only compatible, long-term series of U.S. trade data currently available. The data are presented in terms of broad commodity categories based on a concept of end-use demand.

OVER the past half century, finished (final) products have accounted for an increasing share of U.S. exports and imports while the relative importance of industrial supplies and materials has declined. The shift became evident in exports soon after World War II, but the shift in imports did not materialize until the start of the past decade.

These are among the developments that emerge from an analysis of a new volume of U.S. foreign trade statistics published by the Office of Business Economics as a supplement to the *SURVEY*. The new volume, entitled "U.S. Exports and Imports Classified by OBE End-Use Commodity Categories, 1923-1968," presents the only consistent, long-term series of statistics on U.S. exports and imports currently available.¹ These data link up directly

with comparable statistics available currently on a monthly and quarterly basis, thus permitting the changing commodity structure of U.S. trade to be traced over the entire period since the mid-1920's. The brief discussion here utilizes data from the new volume to point up some major commodity shifts since the 1920's in terms of broad end-use categories, and to touch on some aspects of the sharp deterioration in the U.S. trade balance in recent years.

End-use demand

The U.S. export and import data presented in the new volume are classified into broad commodity categories based on a concept of end-use demand. This classification scheme was originated in the mid-1950's by OBE's balance of payments division. Its aim was to enhance the usefulness of existing foreign trade statistics compiled by the Bureau of the Census, which are organized in terms of the physical nature of commodities and their stage of processing, or in terms of the principal industries *producing (supplying)* the commodities. OBE's end-use classification is in terms of the principal sectors of the economy *using or consuming* the commodities. The end-use classification scheme was designed to facilitate analysis of longrun and shortrun changes in trade in terms of market sectors, thus relating trade to economic developments here and abroad.

The end-use data in the new volume represent a comprehensive restructuring, revision, and updating of the historical end-use statistics initially published, in more limited scope, in the

"1963 Balance of Payments," a supplement to the *SURVEY*. In addition, several new series have been developed. These include seasonally adjusted quarterly data for principal export and import end-use categories and selected summary commodity groupings. Also shown are data on U.S. trade in recent years, 1965-68, by major countries and world areas in full end-use detail. All tables other than these country/area tables present data over a long span: exports are shown annually 1925-68 and quarterly 1958-68; imports are shown annually 1923-68 and quarterly 1953-68.

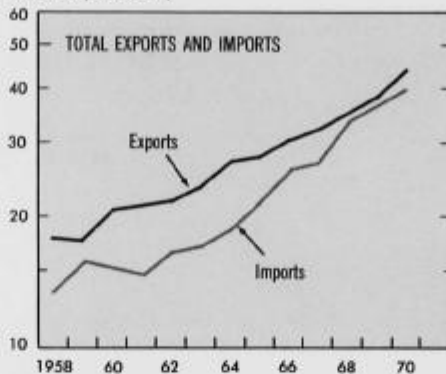
OBE's end-use series are constructed from basic data issued by the Bureau of the Census, which has primary responsibility for compiling the official statistics of U.S. merchandise exports and imports. The Census Bureau currently collects foreign trade data on the basis of some 14,000 individual commodity numbers contained in its commodity classification schedules: almost 4,000 in Schedule B, for exports, and more than 10,000 in the Tariff Schedules of the United States Annotated (TSUSA), for imports.

OBE's end-use categories are constructed by assigning each of these 14,000 "building blocks" to one of 228 basic end-use commodity groupings—116 for exports, and 112 for imports—each of which is identified by a four-digit code number. These basic four-digit commodity groupings aggregate into broader intermediate groupings, identified by three-digit and two-digit codes. The intermediate groupings, in turn, combine at the broadest level into

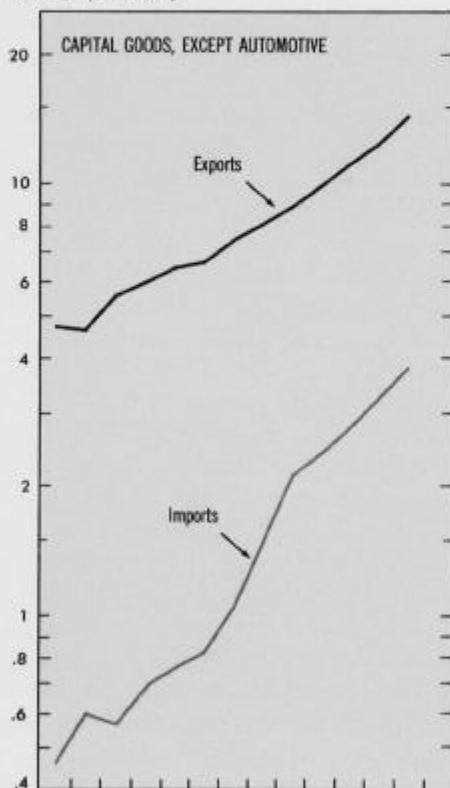
1. The volume is available at \$4.00 per copy from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or from any U.S. Department of Commerce field office.

U.S. Exports and Imports by principal end-use commodity categories

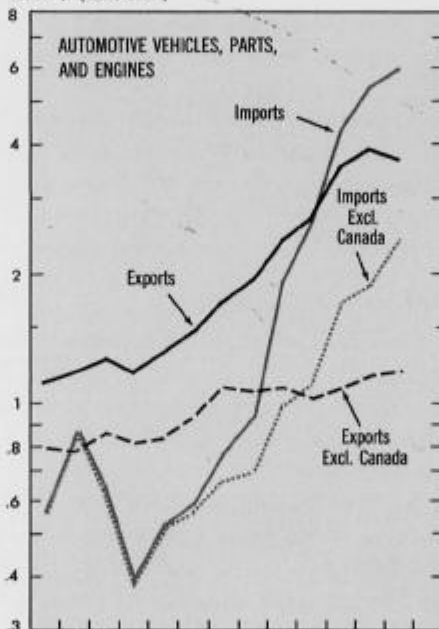
Billion \$ (Ratio scale)



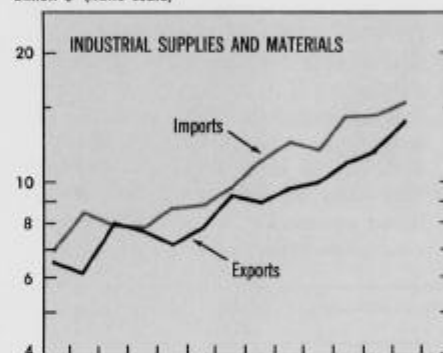
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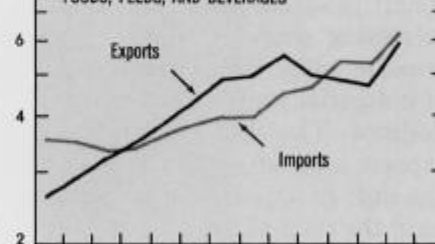
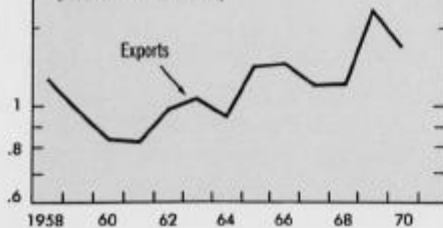
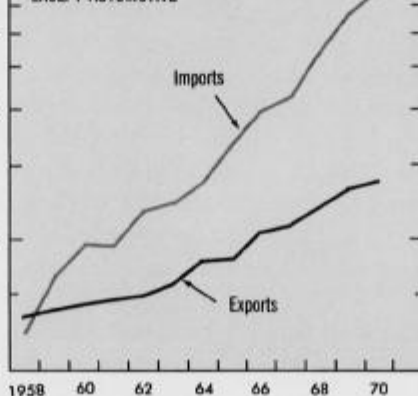
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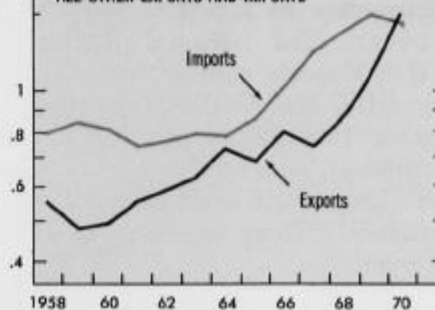
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SPECIAL CATEGORY
(MILITARY-TYPE GOODS)CONSUMER GOODS (NONFOOD)
EXCEPT AUTOMOTIVE

ALL OTHER EXPORTS AND IMPORTS



the principal one-digit end-use categories—seven for exports, six for imports. All 228 commodity groupings, including the principal end-use categories shown below, are contained in the supplement.

Foods, feeds, and beverages
Industrial supplies and materials
Capital goods, except automotive
Automotive vehicles, parts, and engines
Consumer goods (nonfood), except automotive
Special category (military-type goods)—*exports only*
All other: exports, n.e.c., and re-exports; imports, n.e.s.

The data presented in the new volume are based directly on the Census Bureau trade statistics and are not adjusted to a balance of payments basis; such adjustment would entail excluding military aid and other military exports and imports of the Defense Department, and various other adjustments. This was not done because the necessary commodity detail is lacking or, in the case of Defense Department military shipments, is not identifiable for security reasons.

Growth and Changing Pattern of U.S. Foreign Trade

During the near-50-year period covered by the new volume, the value of U.S. merchandise trade has undergone a huge expansion, allied to the even faster growth of world trade as a whole. U.S. exports rose from less than \$5 billion in 1925 to more than \$34½ billion in 1970 (more than \$43 billion in 1970), and imports rose from \$4 billion to more than \$33 billion (\$40 billion in 1970). These increases in value reflect gains in both volume and prices.

The strong growth in both exports and imports and the sharp shift in the commodity structure of our trade are seen in table 1. The share of finished products in our total combined export and import trade was just under 20 percent before the war. It rose to an average 31 percent in the 1946-58

period and continued to rise in the following years, reaching almost one-half (47.4 percent) by 1970. The shift in exports, which occurred earlier than that in imports, was dominated by sharply accelerated shipments of capital equipment, though military goods also played a role. Once started, the shift of imports toward finished products proceeded with greater vigor than the shift of exports.

Table 1 also shows that the increase in the finished products share of total imports has involved all three major categories of finished products—consumer goods (nonfood), automotive products, and capital equipment. In ex-

ports, by contrast, the finished goods share expansion was essentially confined to capital goods, although the United States-Canadian Automotive Products Trade Act of 1965 resulted in a strong rise in automotive exports to Canada (and an even stronger increase in automotive imports from Canada). Even so, automotive exports to all markets have since 1965 accounted for a share of total exports little changed from the 8-percent share in the prewar period, as the share of automotive exports to markets outside Canada has evidenced a marked decline during the postwar period. The share of other nonfood consumer goods in total exports is also

Table 1.—Value and Share of Principal End-Use Categories in U.S. Foreign Trade Prewar and Postwar Periods

End-use category	Prewar period				Postwar period							
	Average 1925-29		Average 1930-39		Average 1946-58		Average 1959-65		Average 1966-70		1970	
	Mil- lion \$	% of total	Mil- lion \$	% of total	Mil- lion \$	% of total	Mil- lion \$	% of total	Mil- lion \$	% of total	Mil- lion \$	% of total
EXPORTS												
Total exports and reexports, including military grant-aid.....	4,999	100.0	2,801	100.0	14,074	100.0	22,850	100.0	35,594	100.0	43,225	100.0
Finished (final) products, including special category (military-type goods).....	1,228	24.5	784	28.3	8,520	60.5	10,312	45.0	10,293	28.9	22,192	51.3
Capital goods, except automotive, excluding special category (military-type goods).....	508	10.2	358	12.7	3,566	25.3	6,370	27.9	11,318	31.8	14,366	33.2
Automotive vehicles, parts, engines.....	421	8.4	317	11.3	1,048	7.5	1,438	6.3	3,229	9.1	3,462	8.0
To Canada.....	n.a.		n.a.		315	2.2	525	2.3	1,123	3.2	2,474	5.7
To all other areas.....	n.a.		n.a.		733	5.3	913	4.0	2,106	5.9	1,988	4.5
Consumer goods (nonfood), except automotive.....	203	4.1	179	6.4	1,120	7.9	1,530	6.7	2,365	6.6	2,745	6.3
Special category (military-type goods).....	0		37	1.3	734	5.2	973	4.3	1,295	3.6	1,260	2.9
Industrial supplies and materials.....	2,605	52.3	1,477	52.7	5,728	40.8	7,833	34.2	11,222	31.5	17,767	40.8
Foods, feeds, and beverages.....	838	16.8	784	28.0	2,331	16.6	3,307	14.5	5,163	14.5	8,828	20.4
All other ¹	123	2.5	60	2.1	1,385	9.8	591	2.6	999	2.8	1,062	2.4
IMPORTS												
Total general imports.....	4,207	100.0	2,142	100.0	9,864	100.0	17,064	100.0	32,348	100.0	39,963	100.0
Finished (final) products.....	474	11.1	223	10.4	1,968	19.9	3,812	22.3	12,420	38.4	17,288	43.3
Capital goods, except automotive.....	30	0.7	16	0.7	210	2.1	640	3.7	2,800	8.7	3,782	9.5
Automotive vehicles, parts, engines.....	2	0.0	1	0.0	108	1.1	608	3.5	4,027	12.4	5,955	14.9
From Canada.....	1	0.0	0	0.0	6	0.0	0	0.0	2,441	7.5	3,684	9.2
From all other areas.....	1	0.0	1	0.0	102	1.1	608	3.5	1,586	4.9	2,271	5.7
Consumer goods (nonfood), except automotive.....	440	10.5	208	9.7	742	7.5	2,208	13.0	5,638	17.4	7,451	18.6
Industrial supplies and materials.....	2,809	66.7	1,251	58.5	5,995	60.8	8,841	51.2	15,491	47.9	18,117	45.3
Foods, feeds, and beverages.....	946	22.5	530	24.7	2,710	27.5	3,607	21.1	5,156	15.9	6,158	15.4
All other ²	44	1.0	40	1.9	259	2.6	791	4.6	1,287	4.0	1,399	3.5

¹ Less than \$500,000, or less than 0.05 percent. N.A.—Not available.
² After adjustment for statistical comparability. Data on special category (military-type goods), capital goods (except automotive), and all other (exports, n.e.c., and imports, n.e.s.) as published in the supplement and in other data sources for the years 1951-57 are not comparable with earlier or later periods. Estimates of a reasonably correct order of magnitude are shown here for these 3 categories to bring the period 1946-58 into approximate comparability with the other periods shown in this table.

³ All other consists of: "Exports, n.e.c." (reexports, low-value shipments, and miscellaneous special transactions); and "Imports, n.e.s." (low-value shipments, U.S. goods returned, and miscellaneous special transactions).

Note.—Details may not add to totals because of rounding.

little changed from the prewar figure of about 6 percent.

Capital goods now account for one-third of total exports, compared to less than 15 percent in prewar years. Capital goods exports continue to show a large surplus over corresponding imports, which have grown from less than 1 percent of total imports before the war to almost 10 percent in 1970. The growth rate of capital goods imports—proceeding from a very small base—was very rapid in the 1950's and early 1960's but has eased noticeably since 1966 (chart 12).

The growing importance of finished (final) products in U.S. exports has occurred largely at the expense of industrial supplies and materials. In the case of imports, the growth of the

finished products share has been accompanied by a decline not only in the supplies and materials share but also in the foodstuffs share.

The supplies and materials share of exports fell from 56 percent in the prewar period to 38 percent in 1946-58 and 32 percent in 1970. Imports of industrial materials averaged above 60 percent of total imports in the prewar years and above 50 percent into the 1960's; the share then dropped to 42 percent in the last half of the 1960's and to 38 percent in 1970.

The share of foods, feeds, and beverages in total exports has fluctuated narrowly between 12 and 17 percent during the long span of years shown in table 1. The share of foodstuffs in imports, on the other hand, declined from 28 percent in the 1930's and in

1946-58, to 21 percent in the early 1960's, and to less than 16 percent thereafter. Chart 12 shows that the growth pattern of foodstuffs imports has been smoother than that of exports. This probably reflects the fact that much of our food and beverage imports consists of commodities not grown, or grown in insufficient quantity, in the United States—coffee, sugar, cocoa, etc. The demand for such commodities presumably grows with increases in U.S. population and incomes. The movement of U.S. exports of foods and feeds, on the other hand, is more volatile, being largely subject to world climatic conditions and government policies which influence supplies of competing nations, the demands of importing nations, and world prices.

Table 2.—U.S. Merchandise Trade by Principal End-Use Categories, by Developed and Developing Countries

(Millions of dollars)

	1955			1965			1970		
	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance
GLOBAL									
Total, excluding military grant exports.....	26,742	22,426	4,316	34,861	31,226	3,635	42,682	39,963	2,719
Total, including military grant exports.....	27,821	21,626	6,195	34,634	31,226	3,408	43,225	39,963	3,262
Foods, feeds, and beverages.....	4,026	3,940	86	4,813	4,271	542	6,329	6,158	171
Industrial supplies and materials.....	8,017	11,024	-2,107	11,004	24,180	-13,176	13,787	10,117	3,670
Capital goods, except automotive.....	3,030	1,456	1,574	11,072	2,780	8,292	14,896	3,792	11,104
Machinery, except consumer-type.....	6,794	1,357	5,437	3,042	2,872	160	11,554	3,551	8,003
Civilian aircraft, parts, and engines.....	1,077	102	975	2,827	188	2,639	2,861	191	2,670
Automotive vehicles, parts, and engines.....	1,029	920	109	2,436	4,286	-1,850	3,863	5,085	-1,222
Canada—recorded value.....	908	245	663	2,378	2,518	-140	2,474	3,384	-910
—transactions value.....	(365)	(229)	(136)	(2,378)	(2,518)	(140)	(2,474)	(3,384)	(910)
Other areas.....	1,081	803	278	1,076	1,077	-1	1,178	2,371	-1,193
Consumer goods (nonfood), except automotive.....	1,786	3,306	-1,520	2,554	5,376	-2,822	2,746	7,522	-4,776
Special category (military-type goods).....	1,229	(?)	1,229	1,110	(?)	1,110	1,868	(?)	1,868
All other.....	680	846	-166	861	1,347	-486	1,802	1,400	402
DEVELOPED COUNTRIES¹									
Total, including military grant exports.....	19,587	14,167	5,420	23,536	24,129	-593	29,864	29,283	581
Foods, feeds, and beverages.....	3,173	1,408	1,765	2,800	2,145	655	3,530	2,540	990
Industrial supplies and materials.....	6,270	8,261	-1,991	7,782	9,741	-1,959	9,833	10,522	-689
Capital goods, except automotive.....	4,496	1,420	3,076	11,072	2,810	8,262	14,896	3,792	11,104
Machinery, except consumer-type.....	4,577	1,328	3,249	3,042	2,428	600	11,554	3,551	8,003
Civilian aircraft, parts, and engines.....	904	102	802	1,788	188	1,600	2,861	191	2,670
Automotive vehicles, parts, and engines.....	1,267	928	339	2,708	4,290	-1,582	3,871	5,085	-1,214
Canada—recorded value.....	908	245	663	2,378	2,518	-140	2,474	3,384	-910
—transactions value.....	(365)	(229)	(136)	(2,378)	(2,518)	(140)	(2,474)	(3,384)	(910)
Other areas.....	1,299	802	497	1,330	1,077	253	1,178	2,371	-1,193
Consumer goods (nonfood), except automotive.....	1,866	2,741	-875	1,488	4,223	-2,735	1,094	5,408	-4,314
Special category (military-type goods).....	786	(?)	786	670	(?)	670	1,868	(?)	1,868
All other.....	423	700	-277	870	1,113	-243	1,071	1,400	-329
DEVELOPING COUNTRIES									
Total, including military grant exports.....	9,186	7,359	1,827	11,096	9,697	1,399	13,362	10,706	2,656
Foods, feeds, and beverages.....	1,786	2,448	-662	1,023	3,125	-2,102	1,087	2,619	-1,532
Industrial supplies and materials.....	2,822	4,104	-1,282	3,223	4,418	-1,195	3,886	4,496	-610
Capital goods, except automotive.....	2,630	31	2,600	3,550	104	3,446	4,416	391	4,025
Machinery, except consumer-type.....	2,221	31	2,190	2,052	104	1,948	3,740	379	3,361
Civilian aircraft, parts, and engines.....	221	(*)	221	830	(*)	830	676	2	674
Automotive vehicles, parts, and engines.....	722	1	721	746	6	740	280	3	277
Consumer goods (nonfood), except automotive.....	710	502	208	1,102	1,102	0	1,061	1,894	-833
Special category (military-type goods).....	680	(?)	680	436	(?)	436	1,868	(?)	1,868
All other.....	269	140	129	272	233	39	451	300	151

* Less than \$500,000.

1. Automotive imports from Canada have been adjusted to the value at which the purchases are actually made, the "transactions" value, instead of the Statutory valuation recorded in Census statistics; automotive exports are carried in Census statistics at transactions value.

2. Not applicable.

3. "Exports, n.e.s." (reexports, low-value shipments, and miscellaneous special trans-

actions), and "Imports, n.e.s." (low-value shipments, U.S. goods returned, and miscellaneous special transactions).

4. Composed of Western Europe, Canada, Japan, Australia, New Zealand, and Republic of South Africa.

Note.—Details may not add to totals because of rounding.

Shifts in the Trade Balance Since 1965

The U.S. merchandise trade surplus dropped from an annual average of \$5.4 billion in the first half of the 1960's (calculated excluding military grant-aid exports) to \$2.6 billion in the next 5 years, 1966-70. The surplus reached a 31-year low of \$0.8 billion in 1968, when strongly expanding domestic economic activity, strikes and strike threats in domestic metal industries, and sharply increased auto imports under the 1965 United States-Canadian automotive trade agreement all contributed to a sharp rise in imports while exports rose much less strongly. The overall surplus in 1965 was \$5.2 billion, about equal to the average for the first half of the decade. In 1970 it was \$2.7 billion, about equal to the 1966-70 average. To trace the commodity structure of these shifts in the trade balance, table 2 shows exports, imports, and the balance for the years 1965, 1968, and 1970. (The commodity and area data in the table reflect exports including military aid because detail on such shipments cannot be separately identified for security reasons.)

The large overall surplus in 1965 reflected our customary strong surplus in capital goods and smaller surpluses in foodstuffs, automotive products, and special category (military-type) goods. These were partly offset by our long-term deficits in industrial supplies and materials and in nonfood consumer goods (except automotive).

The surplus on capital goods has expanded further since 1965, and the deficit on industrial materials, after deepening in 1968, eased considerably in 1970. But the improvements from 1965 to 1970 in these two major categories were far outweighed by the shifts

from surplus to deficit in foodstuffs and, more conspicuously, automotive products, and by the rapid deepening of the deficit in other nonfood consumer goods.

The surplus in capital goods trade was \$6.6 billion in 1965 and \$10.6 billion in 1970. The \$4 billion improvement reflected gains of \$2.5 billion in machinery and \$1.5 billion in aircraft. However, aircraft exports are volatile, fluctuating with the introduction of new models and the phasing out of older models, and thus cannot be considered a stable component of the capital goods balance.

The deficit in industrial supplies and materials rose from \$2.1 billion in 1965 to a peak of \$3.2 billion in 1968, when heavy inflows of steel from Europe and Japan were recorded. With the arrangement for voluntary steel quotas in 1969, and with heavily cyclical demand for steel in Europe since 1968, the deficit was sharply reduced to \$1.4 billion in 1970.

The balance in foods, feeds, and beverages switched from a surplus of nearly \$1 billion in 1965 to a deficit of about \$0.3 billion in 1970, despite record exports of foods and feeds last year. The deterioration since 1965 resulted from strongly rising imports of meats, alcoholic beverages, and specialty foods, augmenting the growth of the more traditional food imports.

The U.S. trade position in automotive products has shifted drastically—from a surplus of nearly \$1 billion in 1965 to a deficit of \$2.3 billion in 1970 (about \$2.0 billion if adjustment is made to eliminate the overvaluation in the import statistics of motor vehicles from Canada; see footnote 1, table 2.) This \$3 billion adverse shift reflected a swing from surplus to deficit in our automotive trade balance with Canada

and a worsening of the deficits with Europe and Japan. The deterioration of the balance with Canada principally reflects the impact of the 1965 automotive trade agreement, which induced U.S. auto manufacturers to expand existing, and develop new production facilities in Canada. The deterioration in automotive trade with the other industrial countries largely reflects the success of the small car in the U.S. market, while U.S. automotive exports continue to be faced with formidable tariff and nontariff barriers which have long impeded sales in foreign markets.

The trade balance in nonfood consumer goods (except automotive) also deteriorated by more than \$3 billion between 1965 and 1970—from a deficit of \$1.5 billion to one of \$4.8 billion. Imports grew twice as fast as exports during the period—at an average annual rate of 18 percent compared with 9 percent. The increasing U.S. demand for imported footwear, apparel, radio and television sets, motorcycles, and a host of other consumer items reflects not just highly competitive prices but aggressive marketing by foreign producers and evidently a growing preference by American consumers for foreign products.

The recent deterioration in the overall U.S. trade balance has been entirely with the developed countries; table 2 shows that our trade balance with the developing countries has actually shown a very moderate improvement. Among the latter group of countries, we have improved our trade position in industrial supplies and materials, capital goods (and military goods) and, to a lesser extent, in automotive products. These improvements have outweighed the effect of a worsening deficit in foodstuffs and a swing from surplus to deficit in other nonfood consumer goods.